# **U.S. ARMY**



# INSTALLATION RESOURCES AND CONDITION SURVEY (IRCS)

# **APRIL 2003**



CENTER FOR ARMY ANALYSIS 6001 GOETHALS ROAD FORT BELVOIR, VA 22060-5230

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Director Center for Army Analysis ATTN: CSCA-RA 6001 Goethals Road Fort Belvoir, VA 22060-5230

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#### INSTALLATION RESOURCES AND CONDITION SURVEY

#### **SUMMARY**

THE PROJECT PURPOSE was to determine the status of the databases that are required for stationing analyses.

THE PROJECT SPONSOR was the Deputy Chief of Staff G-3, Force Modernization Division.

#### THE PROJECT OBJECTIVES were to:

- (1) Examine data bases used in stationing analyses and report any problems.
- (2) Investigate and report possible solutions to any data base problems.

THE SCOPE OF THE PROJECT was to examine the Army Stationing and Installation Planning (ASIP) and the Headquarters Real Property Planning and Analysis System (HQRPLANS) data bases for five installations. The installations were Ft. Belvoir, Ft.Meade, Ft. Knox, Ft. Sill, and Ft. Rucker. These installations were chosen because of activity observed in previous stationing analyses.

#### THE MAIN ASSUMPTIONS were:

- (1) Accuracy of personnel numbers in unit identification codes (UICs) and spaces assigned to these UICs after stationing were indicators of the data base status.
- (2) Accuracy of the data bases examined was an indicator of the data base status.

#### THE PRINCIPAL FINDINGS are:

- (1) The troop lists for the ASIP and HQRPLANS data bases after the annual December update were found to be identical.
- (2) Administrative and workspaces for contractors are not included in the HQRPLANS stationing profile. A work-around for determining contractor requirements could be developed using HQRPLANS algorithms and space allocation rules. Implementing this method would be manual and time consuming. An alternative solution would be to have the contractor unit identification (ID) counted within the HQRPLANS structure.

- (3) HQRPLANS lumps contractors into a dummy unit instead of assigning them in the major unit to which they belong. The identification of contractors in their parent units would require units to identify who their contractors were with appropriate UICs.
- (4) Spaces indicated as available in the HQRPLANS tab file were found in some site visits not to be available for new tenants to occupy. Installations need to ensure their data is correct; and on site visits are recommended to insure that space is available.
- **(5)** There is no indication in an HQRPLANS tab file what space available is contiguous. On site visits are recommended to insure available space is contiguous.
- (6) Space analyses need to be able to determine contractor space requirements, especially if the number of civilians to be replaced by contractors is in accordance with the Department of the Army (DA) projections.
- (7) Without an allocation of space assigned to contractors, the amount of excess space available on an installation will not reflect the actual amount of space available.

**THE PROJECT EFFORT** was conducted by Dr. Charles R. Leake, Center for Army Analysis, Resource Analysis Division.

**COMMENTS AND QUESTIONS** may be sent to the Director, Center for Army Analysis, ATTN: CSCA-RA, 6001 Goethals Road, Suite 102, Fort Belvoir, VA 22060-5230

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### 1 INTRODUCTION

## 1.1 INSTALLATION RESOURCES AND CONDITION SURVEY (IRCS)

The Deputy Chief of Staff, G3-Force Management (DCS-G3-FM) requested this project.

### 1.2 Background

In the report of the Department of Defense (DOD) on Base Realignment and Closure (BRAC), DOD calculated the percent change in the ratio of base capacity to personnel supported or dollars expended from 20 percent – 28 percent depending on the mission area. The change spanned the period of 1989-2003. The rate of change used civilian and military authorized in the denominator for many of these calculations; it excluded contractor support. The significant presence of contractors has subsequently been noted by visiting Stationing Cell analysts during the fiscal year 02 (FY 02) on-site data gathering surveys.

#### 1.3 Problem Statement

Problem Statement: To determine the status of the data bases used in stationing analyses.

In order to insure the accuracy of stationing analyses, it is important to start with accurate data bases. This study examines the accuracy of 2 data base systems: the Army Stationing and Installation Planning data base (ASIP) and the Headquarters Real Property Planning and Analysis System data base (HQRPLANS). Both these systems form the basis for the data used in stationing analyses and are used in the Optimal Stationing of Army Forces (OSAF) model.

## 1.4 Purpose and Objectives

The purpose of the study was to determine the status of the data bases that are required for stationing analyses.

The objectives of the study were to:

- (1) Examine data bases used in stationing analyses and report any problems.
- (2) Investigate and report possible solutions to any data base problem.

In as much as data bases form the backbone of any analysis, it is natural to expect that they should be examined for possible flaws. In the event that any flaws become apparent, they should be corrected or at least identified to be used as qualifiers for any analyses. These concepts form the basis for the purpose and objectives of this study.

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## 1.5 Scope

The scope of the project was to examine the ASIP and HQRPLANS data bases for 5 installations which showed a lot of movement activity in the "Stationing Study". The installations were Ft. Belvoir, Ft. Meade, Ft. Knox, Ft. Sill, and Ft. Rucker. The timeframe was 2005.

During a study conducted by CAA, "The Stationing Study" several installations showed a great deal of activity because of their importance. These installations were: Ft. Belvoir, Ft. Meade, Ft. Knox, Ft. Sill, and Ft. Rucker. The timeframe was chosen to be 2005 as this is to be the year designated by Congress to be the next BRAC round.

## 1.6 Assumptions

The main assumptions were:

- (1) Accuracy of personnel numbers in UICs and spaces assigned to these UICs after restationing were accurate.
- (2) The data bases contained accurate information.

The number of personnel by Military and Civilian categories relates to cost and space allocation in stationing analyses. Space and costs are allocated by number of personnel. These stationings must be based on accurate information. The information provided by the data bases to include inputs, algorithms and computed results must be accurate and reflect reality. If this is not so, the lowered status of the data base will reduce proportionately the accuracy of the information provided by the data bases.

#### 1.7 Limitations

The study limitations were:

- (1) The study was limited to the ASIP and HQRPLANS data bases.
- (2) The study was limited to five installations: Ft. Belvoir, Ft. Meade, Ft. Knox, Ft. Sill, and Ft. Rucker

The ASIP and HQRPLANS are the basic data bases used in stationing studies. In as much as they bring together a host of other data bases, the ASIP and HQRPLANS reflect the condition of the total system used for stationing analyses.

There are many installations which one could choose to study. Most however would be of marginal value in a stationing analysis. For this reason, as a result of previous studies it was determined that the five installations listed would be most representative of critical installations to investigate in any stationing analysis.

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## 1.8 Approach

The approach to address the problem was to:

- (1) investigate the ASIP and HQRLANS data bases.
- (2) discuss the results of the study with the contractors which managed the data bases.

The ASIP and HQRPLANS data bases were used to determine the status of the data bases with respect to consistency and contractor spaces in stationing evaluations. Site visits were also made to confirm the accuracy of data bases. The status of the data bases was investigated by querying the data bases for reports. The reports used were troop lists by UIC and stationing profiles of UICs to a hypothetical "green grass" facility. The troop lists were used to determine the personnel by category for UICs at a facility. The stationing profiles were used to determine space allocation for UICs stationed to the "green grass" facility.

The contractors for the data bases are VISTA, Inc for ASIP, and R & K, Inc for HQRPLANS. Additionally the documentation as to how spaces are determined for contractors in the HQRPLANS was investigated and discussed with R & K for possible solutions to include contractor spaces in HQRPLANS. This enabled the second objective to be explored by direct contact with the contractor personnel that manage the data bases. Discussions were conducted until it was ascertained how best to resolve any problems which surfaced during the investigation of the data bases.

## 1.9 Methodology

We examined:

- (1) The ASIP and HQRPLANS data bases for differences between files for personnel in the same UIC.
- (2) The same data bases for differences between manually computed and HQRPLANS computed space allocations after stationing UICs.

We consulted with the contracting agencies for the data bases to determine possible solutions where differences were found.

The troop lists obtained from an ASIP troop list by UIC report and HQRPLANS troop list by UIC were compared by UIC for personnel differences in military and civilian categories.

To compare differences in space allocations an HQRPLANS tab report was compared with an HQRPLANS stationing profile to determine differences in space allocations for UICs. UICs which contained contractors were examined for space allocations after stationing in "green grass" facility. It was found that administrative and work space was not allocated for contractors who were listed as contract personnel in the UICs. For those UICs in which both authorized government civilians and contractors were listed, administrative space in accordance with the space allocation algorithm was computed for the authorized civilians, but not for the contractors.

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## CAA-R-03-3

These differences found in the data bases were brought to the attention of the contractors. They provided CAA with possible solutions to resolve the differences. These solutions are presented in this report.

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### 2 RESULTS

#### 2.1 ASIP data base

The ASIP data base is developed from an authorization document. The data base is used to update other files used in stationing analyses such as HQRPLANS. The documentation for ASIP is found on the internet at http://asip.vistait.com/. A password is required to view the documentation and can be obtained by authorized personnel at the previously mentioned website. The files which ASIP feeds into HQRPLANS are the Population and Troop List files (See Appendix D, Figure D-1). The Population and Troop List files were the ones examined in this study. The ASIP file is updated semi-annually in July and December.

### 2.2 HQRPLANS data base

HQRPLANS uses the data provided by the ASIP file for its installation troop list file, and is critical to accurate stationing analyses. The data bases which are related to HQRPLANS and OSAF are shown in Figure 2 in Appendix D. In order to access the documentation for the HQRPLANS software must be installed on your computer. This software is available to authorized individuals and organizations through R & K, Inc. When a unit is stationed to a new location, HQRPLANS provides the space requirements for the unit at the new location. Space allocations are provided in accordance with a set of formulas imbedded in the HQRPLANS data base management system (DBMS). The space allocations are based on unit populations provided by the ASIP file. Presently there are no formulas in HQRPLANS which assign spaces to contractors in a stationing analysis. HQRPLANS is updated annually in December.

## 2.3 Results (Comparison of data bases before and after December update)

The results of the examination showed:

- (1) The troop lists for the ASIP and HQRPLANS were not found to be identical for the same UICs two months prior to the December update.
- (2) The troop lists for the ASIP and HQRPLANS were found to be identical after the December update.

The Tables 1 and 2 in Appendix E provide an example of what was observed. The before update Table 1 indicates that there are considerable differences between the ASIP troop list and that of the HQRPLANS. Table 2 which was made after the December update shows that the two files do not have any differences.

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### 2.4 Results (Admin Space for Contractors)

The results for an investigation of contractor space allocation were:

- (1) Contractor administrative spaces were not included in the algorithms in HQRPLANS used to station units.
- (2) Authorized civilians are included in the algorithms.
- (3) HQRPLANS tab file for Ft. Belvoir indicated an excess of 418,00 square feet of administrative space. The Directorate of Installation Support indicated that there was no available space for new tenants.

The HQRPLANS database stationing profile was queried after stationing UICs with contractors in them. In all cases, administrative and work space were not included for the contractors in the report. A UIC with both contractors and civilians was also queried, the authorized civilians were assigned administrative and workspace, but the contractors were not.

The figures F-1 and F-2 in Appendix F show the number of contractors and civilians stationed on a facility. With the possible increase in contractors being discussed presently at DA, if the contractors are not allocated spaces in the HQRPLANS stationing profile, stationing analyses will proportionately lose accuracy. This is best illustrated by examining the last column in each chart in Appendix F which indicates the projected proportion of contractors in the event that 50% of the civilian workforce is to be replaced by contractor personnel.

These inaccuracies must be uncovered by site visits to preserve the integrity of any stationing analysis. Additionally a spot check of the data at Ft. Belvoir indicated a surplus of 418,00 square feet (sf) of space. Stationing Cell analysts queried the Directorate of Installation Support (DIS). DIS indicated that no space was available. Additionally, if space is indicated as being available, there is no way of knowing from the data bases that the space is contiguous and suitable for occupation by an organization being stationed in an analysis at the facility without actually making a site visit.

## 2.5 Results (ASIP is Authorized Strength)

The ASIP investigation showed:

- (1) The ASIP file is an authorization document based on authorized force structures. It is not an actual count of forces document.
- (2) Personnel numbers in the ASIP which supplies these numbers to the HQRPLANS on a one to one basis may not reflect reality.

The ASIP file is based on authorized strength. As such it is not always an accurate portrayal of the actual strength of a unit.

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## 2.6 Results (Work Space for Ammo Production)

- (1) A tabulation of space available or in use at Radford Arsenal was conducted using the HQRPLANS tab file.
- (2) The entire arsenal was stationed at a new facility using HQRPLANS stationing profile in order to compare results with the tab file.

Concerning Radford, Arsenal at which ammunition is presently being produced, the HQRPLANS tab file indicated that there were 1,792,000 sf of space for ammunition production at Radford Arsenal for the year 2005. At the new location there was zero space allocated for ammunition production for the year 2005. Radford Arsenal is part of the Department of Defense (DOD) organic industrial base.

The organic industrial base is part of the stationing analysis. It should be possible to consider stationing alternatives for some of this base. If the workspace is not allocated when a unit is analytically moved to a new facility, stationing analyses will not be able to accurately portray such options.

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### 3 SUGGESTIONS

### 3.1 Suggestions (Synchronization)

The ASIP data base is updated bi-annually in July and December, and the HQRPLANS is updated in December. This creates a period of time when the two data bases are out of synchronization. These differences can be significant as was shown in Table E-1 in Appendix E.

The synchronization differences can be avoided by scheduling stationing analyses after the December update of the HQRPLANS. This should be accomplished as closely as possible to the date of the update. If this is not done, between the July update of the ASIP data base and the December update of the HQRPLANS there could be stationing requirement differences because the files will be out of synchronization.

## 3.2 Suggestions (Contractor Space)

The contractor space allocation needs to be corrected so that the allocations can be computed by HQRPLANS. A work-around for determining contractor requirements could be developed using HQRPLANS algorithms and space allocation rules. Implementing this method would be manual and time consuming. An alternate solution would be to have the contractor unit ID counted within HQRPLANS structure

## 3.3 Suggestions (Production Space)

Production space allocation may have to be resolved with algorithms used to allocate spaces in the HQRPLANS data base. An alternative would be to have the organic industrial base installations provide actual production space used and what space including that being used is available on their installations.

# 3.4 Suggestions (Authorized vs Actual)

The authorized vs. actual personnel numbers, authorized space allocation, and contiguity of allocated space should be resolved by site visits. Site visits are needed to insure that stationing analyses correspond to what is actually possible.

#### 3.5 Follow-on Actions

- (1) Data base contractors need to be informed of findings and methods determined to resolve differences for which they are responsible for changing.
- (2) Studies should be conducted as close to when data bases are synchronized as possible.
- (3) Site visits should be made in conjunction with stationing decisions.

These findings need to be further developed with the contractors that manage the data bases. Caution in conducting stationing analyses is prudent especially when considering the timing of the analyses in relationship to the updating of the data bases. Site visits are suggested as a step needed to confirm the efficacy of the analysis.

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## CAA-R-03-3

The findings of this study indicate that there are several discrepancies in the data bases. Recommendations have been suggested as to what might possibly be done to eliminate these discrepancies.

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## APPENDIX A PROJECT CONTRIBUTORS

#### 1. PROJECT TEAM

## a. Project Director:

Dr. Charles R. Leake, Resource Analysis Division

#### b. Team Member:

Mr. Jeffrey Bassichis, VISTA, Inc.

#### c. Other Contributors:

LTC William Tarantino, Resource Analysis Division

Ms. Kumud Mathur

Ms. Tina Davis

#### 2. PRODUCT REVIEWERS

Dr. Ralph E. Johnson, Quality Assurance

#### 3. EXTERNAL CONTRIBUTORS

Vista, Inc (ASIP data base) R & K, Inc. (HQRPLANS data base)

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A-2 IRCS

# APPENDIX B REQUEST FOR ANALYTICAL SUPPORT

Performing Division: RA Account Number: 2002312

A Tasking: Method (Contract-Yes/No): In-house

R Acronym: IRCS

Title: Installation Resources and Condition Survey

Start Date: 03-Oct-02 Estimated Completion Date: 15-Apr-03

Requestor/Sponsor (i.e., DCSOPS): DCS-G3 Sponsor Division: FM

**Resource Estimates:** a. Estimated PSM: 3 b. Estimated Funds: \$0.00

c. Models to be Used:

**Description/Abstract:** Data analysis and collection to include on-site visits to gather and/or certify facilities, lands, and contractor space usage data to establish a more credible resources baseline to assist in the assessment of installations prior to stationing recommendations.

Study Director/POC Signature: Phone#: 703-806-5136

Study Director/POC: Dr. Charles R. Leake

If this Request is for an External Project expected to consume 6 PSM or more, Part 2 Information is Not Required. See Chap 3 of the Project Directors' Guide for preparation of a Formal Project Directive.

#### Background:

P In The Report of the DOD on Base Realignment and Closure, DOD calculated the percent change in the ratio of base capacity to personnel supported or dollars expended from 20-28% depending on the mission area. The change spanned the period of 1989 – 2003. The rate of change used civilian and military authorized in the denominator for many of these calculations; it excluded contractor support. The significant presence of contractors has subsequently been noted by visiting Stationing Cell analysts during

A

R Scope:

T During site visits, examine the contractor space utilization at Knox, Bliss, Rucker, Belvoir, Meade and Sill.

2

**Issues:** Using the DOD mission/function categories as a framework, identify contractor work forces in these work centers that use installation facilities. Determine the impact of this usage on the Army's DOD-reported excess facilities.

*Milestones:* Analyze ACSIM generated reports and visit (as required) six facilities by the end of November. Document Findings by mid-January.

#### **Signatures**

Division Chief Signature: Original Signed and Dated Date:

Division Chief Concurrence: Original Signed and Dated

Sponsor Signature: Original Signed and Dated Date:

Sponsor Concurrence (COL/DA Div Chief/GO/SES): Original Signed and Dated

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B-2 IRCS

# APPENDIX C BIBLIOGRAPHY

ASIP documentation available at http://www.asip.vistait.com/ HQRPLANS available by request from R & K, Inc.

IRCS C-1

C-2 IRCS

## APPENDIX D DATA FLOW

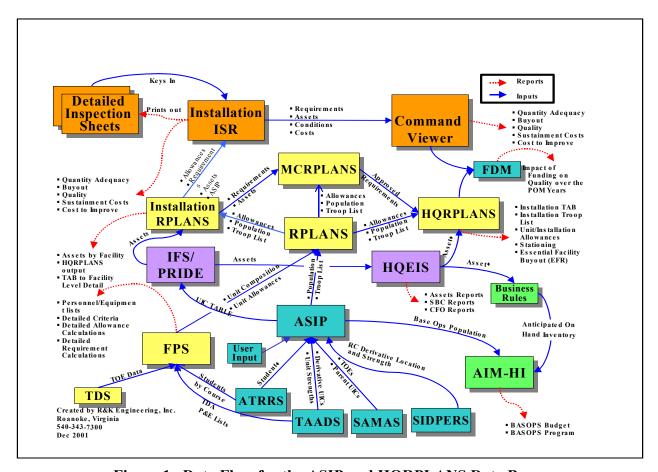


Figure 1. Data Flow for the ASIP and HQRPLANS Data Bases

IRCS D-1

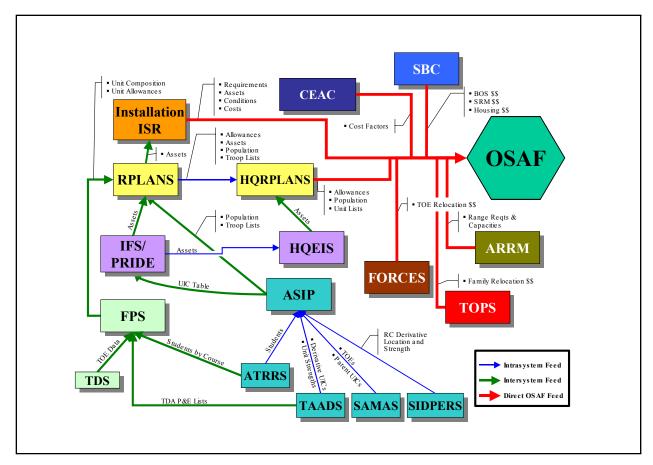


Figure 2. Data Flow to OSAF Model

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# APPENDIX E PERSONNEL ASSIGNED TO UICS BEFORE AND AFTER DECEMBER UPDATE OF HQRPLANS

Table 1. Personnel in UICs before December HQRPLANS Update

	Off		WO		Enl		civ		contr	
UIC/Description	ASIP	RPLANS	ASIP	<b>RPLANS</b>	ASIP	<b>RPLANS</b>	ASIP	RPLANS	ASIP	<b>RPLANS</b>
@4GV11 Contract support	0	Х	0	Х	0	Х	0	Х	267	Х
W0SX13 Sys Mgmt Ctr	2	Х	0	Х	0	Х	20	0	Х	0
W0SX18 Mgmt Ctr	0	Х	0	Х	0	Х	29	Х	0	Х
W4FH10 Software Eng Ctr	3	2	0	0	0	0	80	103	0	0
W4FH13 Software Eng Ctr	Х	0	Х	0	Χ	0	Х	4	Х	0
W4FH14 Software Eng Ctr	Х	0	Х	0	Χ	0	Χ	2	Х	0
W4G828 NV Directorate	4	4	0	0	12	12	359	457	0	0
W4G875 Field Office	0	0	0	0	0	0	44	44	0	0
W4GV75 HQ CECOM	Х	0	Х	0	Х	0	Х	54	Х	0
WOSX14 Sys Mgmt Ctr	Х	1	Х	0	Х	0	Х	40	Х	0

X indicates that there is no listing in HQRPLANS troop list.

IRCS E-1

Table 2 Personnel in UICs after December HQRPLANS Update

UIC	Off ASIP RPI	W N 211A	-		inl SID DD		iv Veid di		ontr	οι ΑΝΙ
@4GV11 Contract support		_ANO A	0	0	0	0	0	0	267	26
W0SX18 Mgmt Ctr	0	0	0	0	0	0	29	29	0	
W4FH10 Software Eng Ct	r 3	3	0	0	0	0	81	81	0	
W4FH13 Software Eng Ct		0	0	0	0	0	4	4	0	
W4G828 NV Directorate	4	4	0	0	12	12	359	359	0	
W4G875 Field Office	0	0	0	0	0	0	44	44	0	
W4GV75 HQ CECOM	0	0	0	0	0	0	47	47	0	

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# APPENDIX F COMPARISON OF GOVERNMENT CIVILIANS AND CONTRACTORS

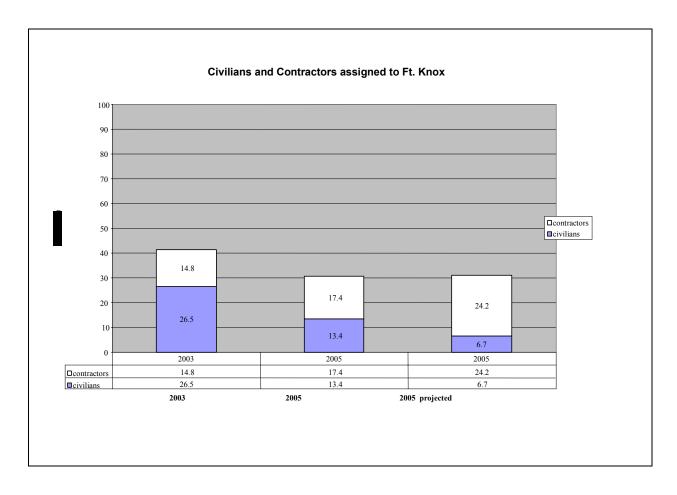


Figure 1. Government Civilians and Contractors Assigned to Ft. Knox 2003 & 2005

IRCS F-1

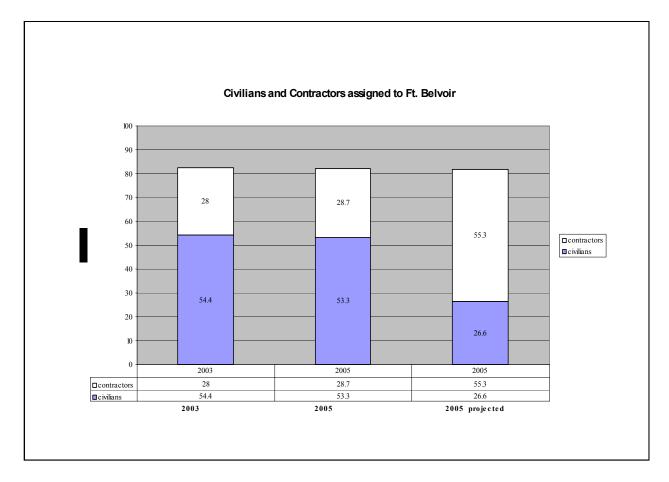


Figure 2. Government Civilians and Contractors Assigned to Ft. Belvoir 2003 & 2005

F-2 IRCS